

Title (en)

PROCESS FOR TRANSFERRING A THIN LAYER TO A SUPPORT SUBSTRATE THAT HAVE DIFFERENT THERMAL EXPANSION COEFFICIENTS

Title (de)

VERFAHREN ZUR ÜBERTRAGUNG EINER DÜNNEN SCHICHT AUF EIN TRÄGERSUBSTRAT MIT UNTERSCHIEDLICHEN WÄRMEAUSDEHNUNGSKOEFFIZIENTEN

Title (fr)

PROCÉDÉ DE TRANSFERT D'UNE COUCHE MINCE SUR UN SUBSTRAT SUPPORT PRÉSENTANT DES COEFFICIENTS DE DILATATION THERMIQUE DIFFÉRENTS

Publication

EP 3646374 B1 20210519 (FR)

Application

EP 18732347 A 20180621

Priority

- FR 1756116 A 20170630
- EP 2018066552 W 20180621

Abstract (en)

[origin: WO2019002080A1] Process for transferring a thin layer (3) consisting of a first material to a support substrate (7) consisting of a second material, the first material and the second material having different thermal expansion coefficients. The process for transferring the thin layer (3) comprises the provision of a donor substrate (1) composed of the assembly of a thick layer formed of the first material (1a) and of a handler substrate (1b), the thermal expansion coefficient of the handler substrate (1b) being similar to that of the support substrate (7) and the donor substrate (1) having a main face (4) on the side of the thick layer (1a); the introduction of light species into the thick layer (1a) in order to generate therein a plane of weakness (2) and to define the thin layer (3) between the plane of weakness (2) and the main face (4) of the donor substrate (1); the assembling of the main face (4) of the donor substrate with a face (6) of the support substrate (7); the detachment of the thin layer (3) at the plane of weakness (2), the detachment comprising the application of a heat treatment.

IPC 8 full level

H01L 21/762 (2006.01); **H01L 41/312** (2013.01)

CPC (source: CN EP KR US)

H01L 21/762 (2013.01 - CN); **H01L 21/76254** (2013.01 - EP KR); **H03H 3/10** (2013.01 - US); **H10N 30/072** (2023.02 - EP KR US); **H10N 30/8536** (2023.02 - US); **H10N 30/8542** (2023.02 - US); **H10N 30/8548** (2023.02 - US); **H10N 30/8554** (2023.02 - US)

Cited by

FR3129033A1; WO2023084164A1

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)

WO 2019002080 A1 20190103; CN 110770893 A 20200207; CN 110770893 B 20231208; CN 117497482 A 20240202; EP 3646374 A1 20200506; EP 3646374 B1 20210519; FR 3068508 A1 20190104; FR 3068508 B1 20190726; JP 2020526008 A 20200827; JP 2023118728 A 20230825; KR 102552244 B1 20230706; KR 20200019677 A 20200224; SG 11201913016S A 20200130; US 11742817 B2 20230829; US 2020186117 A1 20200611; US 2023353115 A1 20231102

DOCDB simple family (application)

EP 2018066552 W 20180621; CN 201880041487 A 20180621; CN 202311552136 A 20180621; EP 18732347 A 20180621; FR 1756116 A 20170630; JP 2019568021 A 20180621; JP 2023094292 A 20230607; KR 20207000833 A 20180621; SG 11201913016S A 20180621; US 201816618696 A 20180621; US 202318348940 A 20230707